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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

PEREZ, G

ART UNIT

PAPER NUMBER

2834

DATE MAILED:

07/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/281,059

Applicant(s)

ASAO ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☒ Interview Summary (PTO-413) Paper No(s) 16
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 4 recites that the opposite side surfaces are made square with an axis of the bobbin in line 5. The specification lacks a statement of the square (perpendicular) relationship between the surfaces of the winding and the axis of the bobbin.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted Prior Art (APA) in view of Hiroshima et al. (U. S. Pat. No. 5,174,013) in view of Harris et al. (U.S. Pat. No. 5, 539, 265).

APA discloses a rotor (1) for an automobile alternator comprising a pair of field cores (12a, 12b) each having a cylindrical base portion (121a, 121b) and a plurality of claw-shaped magnetic poles (122a, 122b) projecting from outer circumferential edges of the base portions (121a, 121b). APA discloses that the field cores (12a, 12b) are secured to a rotating shaft (11) facing each other. APA discloses that the end surfaces

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of the base portions (121a, 121b) are in close contact with each other and that the claw-shaped magnetic poles (122a, 122b) intermesh with each other. APA discloses a cylindrical bobbin (16) having a cylindrical portion (16a) and a pair of first and second annular flange portions (16b) projecting perpendicularly from both ends of the cylindrical portion (16a).

APA discloses that the bobbin (16) is fitted over the base portions (121a, 121b) of the pair of field cores (12a, 12b). APA discloses a field winding (15) wound a predetermined number of turns into multiple layers on the cylindrical portion of the bobbin (16) of the rotor. APA discloses that the bobbin (16) is formed to have a field winding mounting portion in which a radial length (16b) thereof is shorter than an axial length (16a) thereof (figure 7). APA discloses a recessed groove (161) formed in an inner surface of the first annular flange portion (16b) from an outer circumferential end of the first annular flange portion to an inner circumferential end thereof (figure 8), wherein a starting portion (15a) of the field winding is housed in the recessed groove (161) so as to make the surface of the winding square (perpendicular) with an axis of the bobbin.

However, APA does not disclose that the field winding has a flat shape in which a pair of opposite flat surfaces are parallel, the field winding being wound onto the cylindrical portion of the bobbin such that the pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to the radial direction. APA does not disclose a vibration-suppressing ring fitted on the inner circumference of the claw-shaped magnetic poles of the pair of field cores.

Hiroshima et al. disclose that the field winding (4a) has a flat rectangular shape (figure 4) in which a pair of opposite flat surfaces are parallel (figure 4), the field winding (4a) is wound onto the cylindrical portion of the bobbin (3) wherein the pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to a radial direction. The invention of Hiroshima et al. has the purpose of increase the wire density thus decreasing the volume of the equipment which uses the coil.

Harris et al. (U.S. Pat. No. 5, 539, 265) disclose a vibration-suppressing ring (33) fitted on the inner circumference of the claw-shaped magnetic poles (16,18,20,22) of the pair of field cores (12,14). The invention of Harris et al. has the purpose of preventing vibration of the fingers of pole pieces as the rotor assembly rotates within the alternator assembly as a whole.

It would have been obvious at the time the invention was made to modify the rotor of APA and provide it with the flat shape field winding disclosed by Hiroshima et al. and with the vibration-suppressing ring disclosed by Harris et al. (U.S. Pat. No. 5, 539, 265) for the purpose of maximizing the winding density of the coil and minimize motor vibrations.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Hiroshima et al. and further of Harris et al. (U.S. Pat. No. 5, 539, 265) as applied to claim 1 above, and further in view of Harris et al. (U.S. Pat. No. 5, 892, 313).

APA, Hiroshima et al. and Harris et al. (U.S. Pat. No. 5, 539, 265) disclose a rotor as described on item 1 above. However, neither APA, Hiroshima et al. nor Harris et al.

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(U.S. Pat. No. 5, 539, 265) disclose permanent magnets fitted between the claw-shaped magnetic poles of the pair of field cores.

Harris et al. (U. S. Pat. No. 5, 892, 313) disclose permanent magnets (34) fitted between the claw-shaped magnetic poles (18) of the pair of field cores (12, 14). The invention of Harris et al. (U. S. Pat. No. 5, 892, 313) has the purpose of increasing power output without increasing the physical size of the machine.

It would have been obvious at the time the invention was made to modify the rotor of APA, Hiroshima et al. and Harris et al. (U.S. Pat. No. 5, 539, 265) and provide it with permanent magnets fitted between the claw-shaped magnetic poles of a pair of field cores as disclosed by Harris et al. (U. S. Pat. No. 5, 892, 313) for the purpose of increasing the power output of the machine without increasing the size of the machine.

Response to Arguments

Applicant's arguments filed February 8, 2001 have been fully considered but they are not persuasive.

I. In the action mailed on November 8, 2000 the Examiner stated on pages 3-4 that:

"Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The new limitations added to the claims on the October 12, 2000 communication are not clear as to what length is being shortened in the radial direction. Is it the winding thickness, the cylindrical portion or the flanges? The "shortening a length thereof in the

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radial direction than that thereof in an axial direction of said cylindrical portion" line is not clearly describing what and how is being modified in the embodiment." This statement was not addressed in the Applicants' response (paper 14).

In the communication filed on February 8, 2001, the Applicants amended claim 1 to recite that: "*said bobbin is formed to have a field winding mounting portion in which a radial length thereof is shorter than an axial length thereof*", which clarifies the understanding of the claim. The examiner relied on Meier to reject the limitation reciting: "*a field winding mounting portion of said bobbin which said field winding is wound is constructed by shortening a length thereof in the radial direction than that thereof in an axial direction of said cylindrical portion*".

The Examiner did not rely on Meier to reject that: "*said bobbin is formed to have a field winding mounting portion in which a radial length thereof is shorter than an axial length thereof*" since that limitation was not present in claim 1 at the time the action mailed on October 12, 2000 was prepared.

Applicant's admitted Prior Art (APA) and Hiroshima et al. disclose the relationship between the radial length and the axial length of the field winding mounting portion as now being claimed (see figures 3, 7, 12, 15 in Hiroshima).

The Examiner has not failed to identify the teaching of a bobbin being formed to have a field winding mounting portion in which a radial length is shorter than an axial length.

II. In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that references cannot be arbitrarily

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combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969.

In this case, all the references cited are directed to the construction and improvements of claw-pole type rotors for alternators. AAPA discloses a conventional claw-pole type rotor for an alternator. Hiroshima et al. disclose the shaping of the rotor winding of an alternator in a rectangular cross-section to increase winding density. Harris et al. '265 disclose discloses a claw-pole type rotor for an alternator with a vibration-suppression ring which prevent the vibration of the rotor poles during rotation. Harris et al. '313 disclose a claw-pole type rotor for an alternator having permanent magnets fitted between the claw-shaped magnetic poles to obtain a higher power density from the machine.

All the references suggest to one of ordinary skill in the art that in order to increase winding density, prevent excessive vibration of the rotor poles during rotation and obtain a higher power density in a claw-pole type rotor of an alternator, it is needed rectangular cross-section wires, vibration-suppression rings and permanent magnets fitted between the claw-shaped magnetic poles.

III. In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2 1392; 170 USPQ 209 (CCPA 1971).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

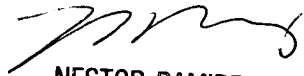
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
July 2, 2001


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